

**REMARKS**

Claims 1 – 83 are pending. Given that the original claims included two claims that were numbered “77”, the second claim numbered “77” has been deleted and added as new claim 83.

I. **Rejections Under 35 U.S.C. § 112**

Many claims have been amended to overcome the rejections under § 112. In view of these amendments, it is believed that the claims meet the requirements of §112.

II. **Rejections Under 35 U.S.C. §§ 102 and 103**

The claims stand rejected as being unpatentable over Chang alone or in combination with Sullivan.

Claims 1 – 33 include a processor for determining one or more dynamic parameters of the golf ball based on two or more images of the golf ball, and for calculating one or more flight parameters of a total flight path of the golf ball based on the dynamic parameters. These claims distinguish over Chang, since Chang lacks any teaching of calculating total flight parameters using dynamic parameters determined using two or more images of a golf ball.

Sullivan likewise lacks teaching of using two or more images of a golf ball to determine dynamic parameters. Accordingly, the subject matter of Claims 1 – 33 is absent from the cited references.

Several additional bases for patentability are found in the dependent claims. For example, with respect to Claims 3 and 10, Applicants further wish to note that the cited references fail to disclose or provide fair suggestion for modifying Chang to use signals indicative of a temporal profile of which sensors the golf head passed over during the swing.

Claims 34 – 59 include the recitation of “an image capture device including a camera for capturing two or more images of the golf ball after impact with a golf club head,” and recite that the processor “determines one or more dynamic parameters of said ball based on an automatic determination of at least one characteristic of at least one of said markings, and a diameter of one or more of said images.” As acknowledged in the office action, Chang lacks teaching of any marking on the golf ball. Chang further lacks the feature of determining dynamic parameter

based in part on a diameter of an image of the ball. This feature is likewise missing from Sullivan, which does not capture an image of the ball but instead uses three detectors, each of which detects the position of a different spot on the ball. Accordingly, Claims 34 – 59 are patentable over the cited combination of references.

Claims 60-63 recite “an image capture device including a camera for capturing two or more images of the golf ball after impact”, and “a processor for automatically determining and comparing three-dimensional spatial positions of said two or more images and calculating a three-dimensional velocity based in part on said three-dimensional spatial position determination and comparison.” These features are missing from the Chang reference. Since Chang does not capture two or more images of the golf ball after impact, Chang also does not include a processor that compares three-dimensional spatial positions of said two or more images and that uses that comparison to calculate a three-dimensional velocity. Sullivan also fails to teach comparing the three-dimensional spatial positions of two or more images.

Similarly, Claims 64-68 are allowable given that neither Chang nor Sullivan teaches using an image of the golf ball to determine a three-dimensional spatial position of the geometric center the image and to use that position for calculating a three-dimensional velocity of the golf ball.

The subject matter of Claims 69 – 73 calling for an image capture device for capturing two or more images of the golf ball after impact, and a processor for estimating when the golf ball will be within a view of the camera for capturing the two or more images is not taught by Chang or Sullivan.

With regard to Claims 74 – 83, neither Chang nor Sullivan teaches a processor which calculates the transfer efficiency of the club head to the golf ball at impact using (1) club speed calculated using signals from spaced apart sensors and (2) dynamic parameters calculated using two or more images of the ball taken with an image capture device.

In view of the forgoing, all claims are allowable over the cited references. Early reconsideration and allowance of the claims is respectfully requested.

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Respectfully submitted,

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